

Claims

1. A knitting machine having a variable stitch mechanism comprising a stitch cam for second stitch comprising a common retracting cam surface to engage with at least one of butts projecting from a needle bed and set at different levels of full height and half height under a pressing action of a presser arranged in a carriage, so as to retract both a butt of half height of a small stitch forming needle and a butt of full height of a large stitch forming needle, a stitch size determining cam surface for a small-sized stitch which is formed to extend continuously from the common retracting cam surface, a stitch size determining cam surface for a large-sized stitch which is engageable with the butt of full height formed at a trailing side with respect to the stitch size determining cam surface for the small-sized stitch, and a receiving cam to restrict excessive retraction of each of the butts of the different-sized stitches forming needles beyond the stitch size determining cam surface corresponding to the butt of the stitch forming needle, whereby the small-sized stitch and the large-sized stitch are formed in the same course,

wherein there are provided the stitch cam comprising:

20 a first cam in which a stitch size determining cam surface for a large-sized stitch and a receiving cam surface to engage with a butt of the needle for forming the large-sized stitch are formed in the same phase as the stitch size determining cam surface, and

a second cam having a common retracting cam surface and a stitch size determining cam surface for a small-sized stitch extending continuously

from the common retracting cam surface, wherein a receiving cam surface engageable with a butt of the needle for forming the small-sized stitch is formed in the same phase as the stitch size determining cam surface for the small-sized stitch,

- 5 drive means for driving the first cam in a front-and-back direction, and
 drive means for driving the second cam in the front-and-back direction,
 and

 wherein the second cam is supported on the first cam in such a manner that when the first cam is shifted in the front-and-back direction by the
10 drive means of the first cam, the second cam is shifted together in the front-and-back direction and also shifted relative thereto in the front-and-back direction by the drive means of the second cam so that the stitch size determining cam surface provided in the second cam can be displaced with respect to the stitch size determining cam surface provided in
15 the first cam.

2. The knitting machine according to Claim 1, wherein a linkage is pivotally mounted on the first cam and linked at one end thereof to the drive side and at the other end to the second cam, so that when the linkage is rotated by the drive of the drive means of the second cam, the second cam is
20 driven to adjust a position of the stitch size determining cam surface of the second cam relative to the stitch size determining cam surface of the first cam.

3. The knitting machine according to Claim 2, wherein a drive guide cam which is driven in the front-and-back direction or a left-and-right direction
25 by the drive means of the second cam is arranged between the drive means

of the second cam and the linkage, a drive guide extending in parallel with a sliding direction of the stitch cam is formed in the drive guide cam, and a driving side of the linkage is supported to freely move along the drive guide.

4. The knitting machine according to Claim 2 or 3, wherein the receiving
5 cam surfaces are formed at front sides of the first and second cams and in the same phase as the respective stitch size determining cam surfaces, and wherein another butt, which is engageable with these receiving cams and is arranged so that a distance between the butt and the another butt can be equal to a distance between the stitch size determining cam surfaces and
10 the receiving cam surfaces, is formed in the needle.

5. The knitting machine according to Claim 2 or 3, wherein the receiving cam surfaces are arranged at the rear side of the first and second cams to confront the stitch size determining cam surfaces across path regions of the butts.